

Unit 9

Day 2

Equations with Radicals

1)

$$x = \sqrt{15 - 2x}$$

2)

$$\sqrt[3]{2x^2 - 5x + 4} = \sqrt[3]{2x^2}$$

3)  $\sqrt{3x+1} + 3 = x$

Should be in Day 1 !!!!

$$4) \quad \left( \frac{x}{x-2} \right)^2 - \frac{4x}{x-2} = 5$$

HOMEWORK: p. 136-7: 27-32, 39-42

Section 1.4  
Radical Equations; Equations  
Quadratic in Form; Factorable  
Equations

Example 1

$$\sqrt{3t + 4} = 2$$

Example 2

$$\sqrt[3]{1-2x} - 3 = 0$$



Example 3

$$\sqrt[5]{2x - 3} = -1$$

Example 4

$$x = 8\sqrt{x}$$

Example 5

$$\sqrt{12 - x} = x$$

Example 5

$$\sqrt{x^2 - x - 4} = x + 2$$

Try This

$$2 + \sqrt{12 - 2x} = x$$

$$\sqrt{3x+1} - \sqrt{x-1} = 2$$

$$(\sqrt{3x+1})^2 = (\sqrt{x-1} + 2)^2$$

$$3x+1 = x-1 + 4\sqrt{x-1} + 4$$

$$3x+1 = x+3 + 4\sqrt{x-1}$$

$$(2x-2)^2 = (4\sqrt{x-1})^2$$

$$4x^2 - 8x + 4 = 16(x-1)$$

$$4x^2 - 24x + 20 = 0$$

$$4(x-5)(x-1) = 0$$

$$x = 5 \quad x = 1$$

Try this:

$$\left(\sqrt{10 + 3\sqrt{x}}\right)^2 = \left(\sqrt{x}\right)^2$$

$$10 + 3\sqrt{x} = x$$

$$x - 10 = 3\sqrt{x}$$

$$x^2 - 20x + 100 = 9x$$

$$x^2 - 29x + 100 = 0$$

$$(x - 25)(x - 4) = 0.$$

$$\cancel{x=4} \quad x=25$$

Example 7

$$(5x - 2)^{1/3} = 2$$



Example 8

$$x^{3/2} - 3x^{1/2} = 0$$

Homework #1

**Homework #1**  
**p. 123: 7-37 (every third problem)**